

56. *Description of a new Branchiobdellid, Cambarincola okadai n. sp., parasitic on American crayfish transferred into a Japanese lake.*

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Recently through the kindness of Prof. Dr. Y. Okada the present writer had an opportunity to examine several specimens of a branchiobdellid worm attached to the sternal surface and appendages of crayfish formerly transferred from America into Lake Chuzenji, Nikko. The specimens were collected by him in 1928 and preserved in formalin. They are undoubtedly referable to the genus *Cambarincola* Ellis 1912,¹⁾ and seem to me to represent a new species, though closely related to the American species, *C. philadelphia* and *C. chirocephala*.

Here the writer wishes to express his deep gratitude to Prof. Dr. Y. Okada for specimens and to Prof. Dr. T. Uchida for the preparation of the paper, and also to Prof. Dr. K. Oguma for his kind advices in various ways.

Cambarincola okadai nov. sp.

The preserved specimens are whitish in colour and more or less transparent. The body is rather elongate and cylindrical, and in most specimens it slightly curves dorso-ventrally with the ventral side concave. The head is broader than the first trunk segment and is distinctly demarcated from the latter by a constriction (Fig. 1). The trunk segments gradually widen from I to VI and then become narrower towards the posterior portion. Among the specimens examined, the largest is 7 mm long and 0.8 mm wide at the widest trunk segment. The dorsal part of the peristomium is provided with four distinct sigitiform appendages, while the ventral part is thick and slightly bilobed. The mouth is surrounded by about sixteen circumoral papillae, which are also found in other genera, such as *Ceratodrilus*, *Stephanodrilus*. Both the dorsal and ventral dental plates are slightly brown

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1) Proc. U. S. Nat. Mus, vol. 42, pp. 481-486,

in colour and of similar shape, forming an isosceles triangle with the base longest. Each plate has a large conical tooth forming the apex of the plate, and two small denticles on each side (Fig. 2). Unlike *Ceratodrilus* and *Pterodrilus*, the worm is destitute of trunk appendages. The spermathecal pore and the male sexual aperture each open on a slightly elevated papilla in the mid-ventral line in trunk segments V and VI respectively. The oviduct pores are paired, situated on the ventro-lateral sides of trunk segment VII. The anterior nephridia open in a common median dorsal pore on trunk segment III. The digestive tract runs almost straight from the mouth to the anus. Two pharyngeal diverticula, one dorsal and the other ventral, are present. The testes and funnels are paired in trunk segments V and VI; the body cavity of these segments is filled with abundant male reproductive cells in different developmental stages. The spermatheca is tubular and not bifid. The spermatic vesicle is bifid, having the accessory sperm tube, so named by Ellis (1912).¹⁾

Remarks:—The present species has plurilobate peristomium which is present among the genus only in *C. philadelphia*, *C. chirocephala* and *C. homodonta*.²⁾ But *C. homodonta* has no bifid spermatic vesicle, though the vesicles of the new species and the other two species are distinctly bifid. The present species, though closely related to *C. philadelphia* and *C. chirocephala* in nearly all characters, is distinguishable from them in the dental plates, especially in the ventral plate; according to Ellis (1920),³⁾ there are two large teeth and two small denticles in *C. philadelphia*, and four subequal denticles in *C. chirocephala*, while the new species has a ventral plate provided with a large apical tooth and two small denticles on each side.

Ellis (1920)⁴⁾ pointed out that the primitive type of dental plates

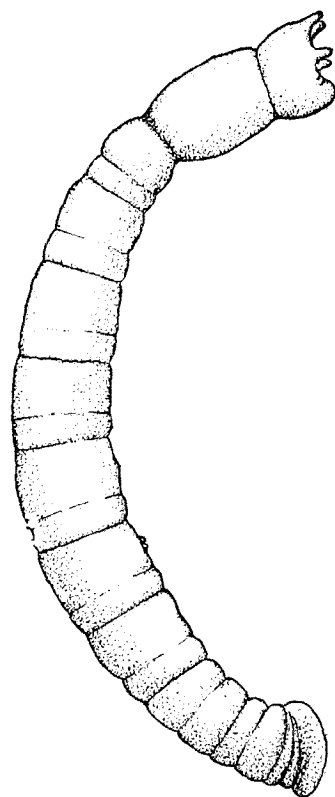


Fig. 1.

Side view of *Cambarincola okadai* n. sp. $\times 20$.

1) Proc. U. S. Nat. Mus. vol. 42, Fig. 4.

2) Proc. 8 (1932), 454.

3) Proc. U. S. Nat. Mus. vol. 55, pp. 262, 263.

4) Proc. U. S. Nat. Mus. vol. 55, pp. 242.

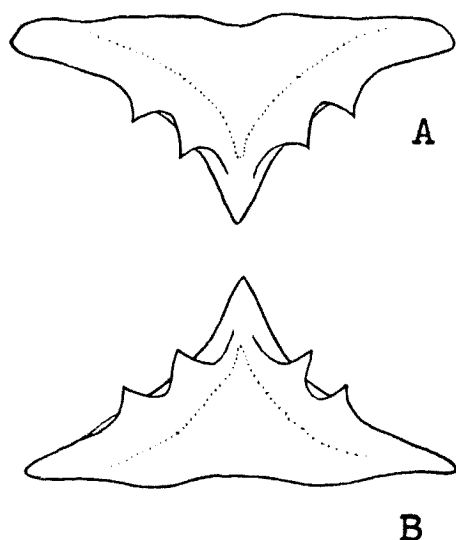


Fig. 2.

Dental plates of *Cambarincola okadai* n. sp. about $\times 330$; A, dorsal plate; B, ventral plate.

in branchiobdellids is probably a sub-equal five-teethed form. According to him, the type is represented by the formula, C-B-A-B-C. Therefore, both the dorsal and ventral plates of the new species, provided with a large median tooth are denoted by the formula, c-b-A-b-c. As to the dentation, *C. philadelphia* and *C. chirocephala* are similar to the new species in the dorsal plate, but the ventral plate of *C. philadelphia* is shown as c-b-b-c lacking the large median tooth, and that of *C. chirocephala* is indicated by the formula c-B-B-c showing the disappearance of the median tooth and the increase of size of the inner pair.

From the difference of the dentition in the ventral plate, it seems to the writer to be right to recognize the Japanese worm as distinct from *C. philadelphia* and *C. chirocephala*.

So far as the writer knows, there has been no report on crayfishes from lake Chuzenji and adjacent districts except those newly transferred from America. The present species was probably introduced from America together with the American crayfish. However, it is a very noticeable fact that the present species and *C. homodonta*, both occurring in Japan, have the dentition of the *homodonta*-type, while in all species belonging to the genus hitherto found in America the dorsal and the ventral plates are different in dentition.